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MCDONNELL BOEHNEN HULBERT & BERGHOFF LLP
300 S. WACKER DRIVE
32ND FLOOR
CHICAGO, IL 60606

EXAMINER	
TRUONG, LOAN	

ART UNIT	PAPER NUMBER
2114	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/586,289	LYU, KI SUNG	
	Examiner	Art Unit	
	LOAN TRUONG	2114	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 July 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 July 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

1. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berkery et al. (US 2004/0205074) in further view of MacKenzie et al. (US 6,363,495).

In regard to claim 1, Berkery et al. teach an apparatus for sensing faults of application programs in a CDMA system, the apparatus comprising:

a shared memory comprising s plurality of fields, wherein each of the fields comprises a Heart Beat (*nodes monitor each other by posting a heartbeat to the database, paragraph 0086)*;

a plurality of application programs corresponding to the plurality of fields in the shared memory on a one-to-one basis (*application heartbeat assures that the process is only still*

running but also processing work at the expected rate, paragraph 0087), each of which accesses to the corresponding field and increments the corresponding Heart Beat by 1 when a certain period (p1) elapses (*each node may post a heartbeat within a specified heartbeat interval, paragraph 0086)*; and

an operation and management processing unit which detects values of the Heart beats of the plurality of fields in the shared memory when other certain period (p2) elapses (*heartbeat checking, paragraph 0087)*; if all of the values of the Heart Beats equals to "1," and performs normal operation (*posting a heartbeat indicates that the node is still running, paragraph 0086)*, and if any of the values of the Heart Beats equals to "0," then the operation and management processing unit recognizes a fault of an application program connected to the field, the value of Heart Beat which is "0," and issues an alarm (*if a heartbeat is not sent, one of the other nodes will sense the issue and initiate a recovery process, paragraph 0094).*

Berkery et al. does not teach an apparatus for sensing faults comprising a management processing unit which detects values of the heart beats then the operation and management processing unit initializes the values to "0".

MacKenzie et al. teach the apparatus for partition resolution in clustered computer system wherein if a heartbeat message was received, then the variable is set equal to zero (*col. 12 lines 2-15).*

It would have been obvious to modify the apparatus of Berkery et al. by adding MacKenzie et al. apparatus for partition resolution in clustered computer system. A person of ordinary skill in the art at the time of applicant's invention would have been

motivated to make the modification because it would minimize the probability of interpreting an unsafe condition as safe (*col. 2 lines 63-65).*

In regard to claim 2, Berkery et al. teach the apparatus according to Claim 1, wherein the reading period (p2) of the Heart beat of the operation and management processing unit is set up to more than the attaching period (p1) of the Heart beat of the application program(*heartbeat checking, paragraph 0087).*

In regard to claim 3, Berkery et al. teach a method for sensing faults of a plurality of application programs in a CDMA system, each of the application programs performing a characteristic operation, the method comprising:

a first step wherein an operation and management processing unit generates a shared memory, the shared memory comprising a plurality of fields, wherein each of the fields comprises a Heart Beat (*nodes monitor each other by posting a heartbeat to the database, paragraph 0086)*, and wherein the plurality of fields correspond to the plurality of application programs on a one-to-one basis (*application heartbeat assures that the process is only still running but also processing work at the expected rate, paragraph 0087)*;

a second step wherein the operation and management processing unit detects whether the present time in reading period (p2) of the Heart Beat (*thread's wait, paragraph 0086)*;

a third step wherein if the present time is not the reading period (p2) of the Heart Beat, then the second step is performed again, and if the present time is the reading period (p2) of the

Heart Beat, then the operation and management processing unit reads all of the values of the Heart Beat in the plurality of fields of the shared memory (*heartbeat checking, paragraph 0086)*;

a fourth step wherein the operation and management processing unit determines whether any of values of Heart Beats in the plurality of the fields equals to "0" (*if a heartbeat is not sent, one of the other nodes will sense the issue and initiate a recovery process, paragraph 0094)*;

a fifth step wherein if there is no field, the value of Heart Beat which equals to "0",i.e. the values of Heart Beats in all fields equal to "1," (*posting a heartbeat indicates that the node is still running, paragraph 0086)*;

a sixth step wherein if there is a field, the value of Heart Beat which equals to "0," among the plurality of fields, then the operation and management processing unit detects a fault of application program corresponding to the field and issues an alarms (*if a heartbeat is not sent, one of the other nodes will sense the issue and initiate a recovery process, paragraph 0094)*; and

Berkery et al. does not teach an apparatus for sensing faults comprising a management processing unit which the operation and management processing unit initialized all values of Heart Beats to "0" and the second step is performed again; a seventh step wherein the second step is performed again after the operation and management processing unit initializes all values of the fields except the field in which the fault is detected.

MacKenzie et al. teach the apparatus for partition resolution in clustered computer system wherein if a heartbeat message was received, then the variable is set equal to zero for each node (*col. 12 lines 2-15)*

Refer to claim 1 for motivational statement.

Conclusion

2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO 892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Loan Truong whose telephone number is (571) 272-2572. The examiner can normally be reached on M-F from 8am-4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Scott Baderman can be reached on (571) 272-3644. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Scott T Baderman/
Supervisory Patent Examiner, Art Unit 2114

Loan Truong
Patent Examiner
AU 2114